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DEPARTMENT OF AGRICULTURE

BUREAU OF CHEMISTRY

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SEED REPORT

1916

JAMES W. KELLOGG,
Chief Chemist

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LETTER OF TRANSMITTAL

DEPARTMENT OF AGRICULTURE

BUREAU OF CHEMISTRY

Hon. Charles E. Patton, Harrisburg, Pa., March 21, 1917.
Secretary of Agriculture,
Harrisburg, Pa.

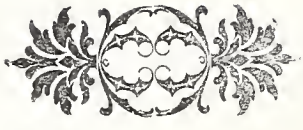
Dear Sir:

I have the honor to present herewith for your approval a report of the work accomplished by the Bureau during the year of 1916 showing the results of testing Seeds for purity under the provisions of the Law regulating the sale of Agricultural Seeds.

It is recommended that this report be published in Bulletin form for distribution.

Respectfully,

JAMES W. KELLOGG,
Chief Chemist.



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INTRODUCTION

During the year 1916 the Seed Analyst of this Bureau, Howard E. Gensler, assisted by Ruth I. Mentzer, tested 491 samples of seeds. This work was performed in accordance with the provisions of the Act of Assembly regulating the sale of Agricultural Seeds.

Of the number examined, 323 were official samples secured by Special Agents from dealers throughout the State and 173 samples were those received from growers, dealers and consumers located in Pennsylvania, which were tested in accordance with the provision for the testing of special samples for a fee of 25 cents. Determinations were made, in each sample, for the percentages of "Pure Seed", "Foreign Seed" and "Inert Matter" and were examined for the presence of dodder and Canada thistle. An average of the results obtained, upon both official and special samples, showed that the various kinds of seeds being sold in the State were all above the standards of purity required.

In determining the percentage of "Pure Seed", only those seeds are considered which are indicated by the name or kind of sample under examination. The "Foreign Seeds" include all other seeds which are present in the sample and which are foreign to the kind of seed which the sample purports to represent. The "Inert Matter" represents the dirt, stones, broken stems and less than halves of the seed being tested or of the foreign seeds. When seeds of Canada thistle or dodder are found present in a sample, under examination, the entire sample is carefully searched for those seeds. The weight of the whole sample of seed searched for the Canada thistle or dodder is then taken. This weight multiplied by the number of seeds a unit weight contains, determined by counting, gives the total number of seeds in the sample examined. Dividing the figure thus obtained by the number of either Canada thistle or dodder seeds, found in the sample, gives the approximate occurrence of these noxious seeds in the sample under examination.

The results of the tests for purity, upon the special samples are shown in Table No. 1. These samples are usually examined for the purpose of determining the necessity for recleaning and also as to whether or not they will meet the standards of purity, and do not represent the final grade of seed being offered for sale, the names of the parties submitting these samples are not shown. Table No. II shows the average percentages of purity of each kind of the official samples received.

STANDARDS OF PURITY

The seed law establishes standards of purity for twenty kinds of seeds and before being offered for sale they should meet these standards. They range from 75% to 97% and are included herewith as follows:—

Medium Red Clover,	Trifolium pratense,	97 %.
Mammoth Red Clover,	Trifolium pratense,	97 %.
Crimson Clover,	Trifolium incarnatum,	97 %.
Alfalfa,	Medicago sativa,	97 %.
Timothy-Grass,	Phleum pratense,	97 %.
Barley,	Hordeum vulgare,	97 %.
Spelt,	Triticum aestivum Spelta,	97 %.
Wheat,	Triticum aestivum,	97 %.
Buckwheat,	Fagopyrum Fagopyrum,	97 %.
Oats,	Avena sativa,	97 %.
Rye,	Secale cereale,	97 %.
Alsike Clover,	Trifolium hybridum,	95 %.
Perennial Rye-Grass,	Lolium perenne,	95 %.
German Millet,	Chaetochloa italica,	95 %.
Hungarian Millet,	Chaetochloa italica,	95 %.
White Clover,	Trifolium repens,	90 %.
Redtop Grass, (solid or hulled).	Agrostis alba,	85 %.
Canadian Blue-Grass,	Poa Compressa,	75 %.
Orchard Grass,	Dactylis glomerata,	75 %.
Kentucky Blue-Grass,	Poa pratensis,	75 %.
Redtop (unhulled),	Agrostis alba,	75 %.

Dodder and Canada thistle are prohibited from being present in excess of 1 seed in 3,000.

SPECIAL SAMPLES TESTED FOR PURITY

By a provision of the seed law, the Department is permitted to test seeds for purity, for residents of Pennsylvania, for a fee of 25 cents for each sample. Parties selling or purchasing seeds, therefore, may, by taking advantage of this provision, determine the character of the seeds purchased or offered for sale and whether or not they should be recleaned in order to meet the required standards.

When samples are submitted for examination care should be taken that they fairly represent the lot or shipment from which they are taken otherwise the results of purity tests will be of little or no value. Only those seeds which are named in the law and included in the foregoing list, showing the standards of purity, will be tested. When sending special samples of seeds to the Department, therefore, the following directions should be carefully noted:

Amount of Sample:—A three or four ounce sample of the seed, carefully secured and representative of the whole lot or shipment, should be placed in suitable containers, preferably envelopes, which can be tightly closed and sealed.

Charge for Purity Test:—The fee charged for testing is 25 cents and should be submitted with the sample in the form of a check, money order or cash. Stamps will not be accepted. Where only one or two samples are to be submitted, it is preferable to send the fee in cash, which may be inserted in the sample of seed with safety, if the envelopes are carefully sealed.

Address:—Bureau of Chemistry, Pennsylvania Department of Agriculture, Box R, Harrisburg, Pa. The name of the seed and address of the sender should be placed on the package or envelope in order to identify the sample. In order to avoid errors, especially where several samples are to be tested, a letter should be sent advising of the sending of the samples and making request for the work to be done.

The following Table (No. I) shows the results of purity tests upon each of the 173 special samples of seeds sent to the Department during the year, to be tested. The average results of each class or kind of seed exceeded the standards of purity required. In a few cases, however, as will be noted, a number of samples were found to test lower than they should indicating the necessity for recleaning before they could be offered for sale.

TABLE I. RESULTS OF TESTS ON SPECIAL SAMPLES.

Analyst's number.	Name of Seed.	Pure seed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
		Per ct.	Per ct.	Per ct.	Approx	Approx
B 612	Red clover,	98.14	1.34	1.52	.....	.....
B 613	Red clover,	99.09	0.54	0.37	.....	.....
B 614	Red clover,	98.28	0.65	1.07	.....	.....
B 615	Red clover,	97.99	1.59	0.42	.....	.....
B 616	Red clover,	98.67	1.16	0.17	.....	.....
B 619	Red clover,	99.68	0.26	0.06	.....	.....
B 620	Red clover,	98.73	0.78	0.49	.....	.....
B 621	Red clover,	97.64	1.94	0.42	.....	.....
B 622	Red clover,	94.87	4.74	0.39	.....	.....
B 623	Red clover,	93.97	0.50	5.53	.....	.....
B 624	Red clover,	98.19	1.72	0.09	.....	.....
B 625	Red clover,	98.62	0.26	1.12	.....	.....
B 626	Red clover,	99.16	0.30	0.54	.....	.....
B 627	Red clover,	86.12	12.96	0.92	.....	.....
B 628	Red clover,	97.42	0.72	1.86	.....	.....
B 629	Red clover,	94.21	2.01	3.78	1-31701	.....
B 630	Red clover,	99.05	0.70	0.25	.....	.....
B 631	Red clover,	97.44	1.31	1.25	.....	.....
B 632	Red clover,	98.67	0.49	0.84	1-235	.....
B 633	Red clover,	99.08	0.67	0.25	.....	.....
B 634	Red clover,	97.24	1.35	1.31	.....	.....
B 635	Red clover,	94.07	5.02	0.91	.....	.....
B 636	Red clover,	99.22	0.42	0.36	.....	.....
B 639	Red clover,	99.44	0.37	0.19	.....	.....
B 640	Red clover,	99.01	0.64	0.35	.....	.....
B 641	Red clover,	98.83	1.09	0.08	1-8646	.....
B 642	Red clover,	99.29	0.55	0.16	1-16581	.....
B 645	Red clover,	96.73	3.08	0.19	.....	.....
B 646	Red clover,	97.70	0.70	1.60	.....	.....
B 647	Red clover,	97.27	2.21	0.52	.....	.....
B 648	Red clover,	95.91	3.45	0.64	.....	.....
B 649	Red clover,	99.61	0.30	0.09	.....	.....
B 651	Red clover,	89.48	8.96	1.56	.....	.....
B 652	Red clover,	98.74	1.05	0.21	.....	.....
B 654	Red clover,	90.37	5.86	3.77	.....	.....
B 658	Red clover,	99.49	0.28	0.23	.....	.....
B 659	Red clover,	99.36	0.56	0.08	1-92279	.....
B 660	Red clover,	99.22	0.44	0.34	.....	.....
B 661	Red clover,	97.78	1.68	0.54	.....	.....
B 665	Red clover,	99.55	0.59	0.26	.....	.....
B 667	Red clover,	99.57	0.24	0.19	.....	.....
B 668	Red clover,	98.92	0.41	0.67	.....	.....
B 669	Red clover,	98.89	1.03	0.08	.....	.....
B 675	Red clover,	94.08	5.07	0.85	.....	.....
B 676	Red clover,	95.97	2.98	1.05	.....	.....
B 677	Red clover,	98.95	0.46	0.59	.....	.....
B 678	Red clover,	99.02	0.66	0.32	.....	.....
B 679	Red clover,	97.53	1.71	0.76	.....	.....
B 680	Red clover,	96.35	2.64	1.01	.....	.....
B 681	Red clover,	97.49	1.83	0.68	.....	.....
B 682	Red clover,	89.16	2.15	8.69	.....	.....
B 683	Red clover,	97.54	1.01	1.45	.....	.....
B 684	Red clover,	98.72	0.33	0.95	.....	.....
B 685	Red clover,	91.78	1.24	6.98	.....	.....
B 686	Red clover,	93.24	3.33	3.43	.....	.....
B 687	Red clover,	90.91	6.99	2.10	.....	.....
B 693	Red clover,	95.88	2.88	1.24	.....	.....
B 694	Red clover,	96.81	1.85	1.34	.....	.....
B 695	Red clover,	99.91	0.05	0.04	.....	.....
B 701	Red clover,	88.97	9.57	1.46	.....	.....
B 702	Red clover,	99.39	0.13	0.48	1-2541	.....
B 704	Red clover,	97.39	1.33	1.28	.....	.....
B 705	Red clover,	99.03	0.83	0.14	.....	.....
B 706	Red clover,	96.19	2.62	1.19	.....	.....
B 707	Red clover,	96.51	2.89	0.60	.....	.....
B 708	Red clover,	98.59	1.12	0.29	.....	.....
B 709	Red clover,	99.14	0.52	0.34	.....	.....
B 710	Red clover,	97.00	1.89	1.11	.....	.....
B 711	Red clover,	98.79	1.05	0.16	.....	.....
B 712	Red clover,	99.26	0.58	0.16	.....	.....
B 713	Red clover,	96.77	1.31	1.92	.....	.....
B 714	Red clover,	98.12	1.13	0.75	1-152833	.....
B 715	Red clover,	98.46	1.12	0.42	.....	.....
B 716	Red clover,	99.05	0.80	0.15	1-8998	.....
B 718	Red clover,	97.80	1.56	0.64	.....	.....
B 719	Red clover,	98.95	0.81	0.24	.....	.....
B 721	Red clover,	94.96	4.84	0.20	.....	.....
B 722	Red clover,	97.26	1.83	0.91	.....	.....

TABLE I.—RESULTS OF TESTS ON SPECIAL SAMPLES—Continued.

Analyst's number.	Name of Seed.	Pure seed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
		Per ct.	Per ct.	Per ct.	Approx	Approx
B 723	Red clover,	99.10	0.66	0.24	.....	.....
B 725	Red clover,	99.64	0.29	0.07	.....	.....
B 726	Red clover,	99.86	0.14	0.00	.....	.....
B 729	Red clover,	99.03	0.49	0.48	.....	.....
B 730	Red clover,	97.55	1.72	0.73	.....	.....
B 731	Red clover,	99.26	0.58	0.16	.....	.....
B 732	Red clover,	99.23	0.50	0.27	.....	.....
B 733	Red clover,	98.77	0.92	0.31	.....	.....
B 734	Red clover,	99.12	0.58	0.30	.....	.....
B 735	Red clover,	95.40	4.27	0.33	.....	.....
B 777	Red clover,	99.32	0.32	0.36	.....	.....
B 778	Red clover,	98.87	0.99	0.14	.....	.....
B 780	Red clover,	97.48	2.23	0.29	.....	.....
B 784	Red clover,	99.78	0.08	0.14	.....	.....
	Average,	97.37	1.73	0.90	.....	.....
B 700	Crimson clover,	98.13	1.47	0.40	.....	.....
B 664	Alfalfa,	99.39	0.34	0.27	1-4835	.....
B 670	Alfalfa,	99.66	0.11	0.23	.....	.....
B 671	Alfalfa,	99.74	0.00	0.26	.....	.....
B 736	Alfalfa,	99.91	0.00	0.09	.....	.....
B 742	Alfalfa,	99.87	0.08	0.05	.....	.....
B 768	Alfalfa,	99.65	0.12	0.23	.....	.....
	Average,	99.70	0.11	0.19	.....	.....
B 618	Timothy grass,	99.93	0.05	0.02	.....	.....
B 637	Timothy grass,	99.57	0.16	0.27	.....	.....
B 638	Timothy grass,	99.54	0.21	0.25	.....	.....
B 655	Timothy grass,	99.93	0.03	0.04	.....	.....
B 656	Timothy grass,	99.58	0.12	0.30	.....	.....
B 657	Timothy grass,	98.49	1.20	0.31	.....	.....
B 717	Timothy grass,	99.97	0.00	0.03	.....	.....
B 724	Timothy grass,	96.30	3.23	0.47	.....	.....
B 728	Timothy grass,	99.58	0.34	0.08	.....	.....
B 737	Timothy grass,	99.22	0.40	0.38	.....	.....
B 739	Timothy grass,	99.29	0.57	0.14	.....	.....
B 740	Timothy grass,	98.63	1.07	0.30	.....	.....
B 741	Timothy grass,	99.66	0.23	0.11	.....	.....
B 743	Timothy grass,	98.58	0.78	0.64	.....	.....
B 744	Timothy grass,	99.53	0.31	0.16	.....	.....
B 745	Timothy grass,	98.75	1.25	0.00	.....	.....
B 747	Timothy grass,	99.77	0.08	0.15	.....	.....
B 748	Timothy grass,	99.13	0.21	0.66	.....	.....
B 749	Timothy grass,	98.91	0.63	0.46	.....	.....
B 750	Timothy grass,	99.53	0.26	0.21	.....	.....
B 751	Timothy grass,	99.98	0.01	0.01	.....	.....
B 752	Timothy grass,	98.10	1.65	0.25	.....	.....
B 753	Timothy grass,	99.29	0.15	0.56	.....	.....
B 754	Timothy grass,	99.46	0.44	0.10	.....	.....
B 755	Timothy grass,	99.39	0.31	0.30	.....	.....
B 756	Timothy grass,	99.86	0.05	0.09	.....	.....
B 757	Timothy grass,	99.17	0.12	0.71	.....	.....
B 758	Timothy grass,	94.12	3.96	1.92	.....	.....
B 759	Timothy grass,	98.43	0.86	0.71	.....	.....
B 760	Timothy grass,	99.69	0.14	0.17	.....	.....
B 761	Timothy grass,	99.92	0.08	0.00	.....	.....
B 762	Timothy grass,	99.77	0.05	0.18	.....	.....
B 763	Timothy grass,	98.89	0.93	0.18	.....	.....
B 764	Timothy grass,	99.80	0.15	0.05	.....	.....
B 765	Timothy grass,	99.79	0.05	0.16	.....	.....
B 766	Timothy grass,	99.91	0.00	0.09	.....	.....
B 767	Timothy grass,	99.47	0.46	0.07	.....	.....
B 769	Timothy grass,	98.83	0.89	0.28	.....	.....
B 770	Timothy grass,	99.61	0.22	0.17	.....	.....
B 771	Timothy grass,	99.55	0.32	0.13	.....	.....
B 772	Timothy grass,	99.60	0.18	0.22	.....	.....
B 773	Timothy grass,	99.55	0.12	0.33	.....	.....
B 774	Timothy grass,	99.52	0.24	0.24	.....	.....
B 775	Timothy grass,	99.58	0.10	0.32	.....	.....
B 776	Timothy grass,	99.75	0.10	0.15	.....	.....
B 782	Timothy grass,	93.84	4.94	1.22	.....	.....
	Average,	99.10	0.60	0.30	.....	.....

TABLE I.—RESULTS OF TESTS ON SPECIAL SAMPLES—Concluded.

Analyst's number.	Name of Seed.	Pure seed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
		Per ct.	Per ct.	Per ct.	Approx	Approx
B 617	Alsike clover,	98.87	0.88	0.25	.....	.....
B 643	Alsike clover,	99.25	0.53	0.22	.....	.....
B 644	Alsike clover,	98.92	0.73	0.35	.....	.....
B 650	Alsike clover,	97.30	1.67	1.03	.....	.....
B 653	Alsike clover,	90.45	8.05	1.50	.....	.....
B 662	Alsike clover,	99.10	0.33	0.57	.....	.....
B 663	Alsike clover,	98.34	1.41	0.25	.....	.....
B 672	Alsike clover,	99.55	0.26	0.19	.....	.....
B 673	Alsike clover,	95.93	1.04	3.03	.....	.....
B 674	Alsike clover,	97.26	2.42	0.32	.....	.....
B 720	Alsike clover,	95.98	3.24	0.78	.....	.....
B 727	Alsike clover,	99.85	0.15	0.00	.....	.....
B 781	Alsike clover,	97.03	2.33	0.64	.....	1-10575
	Average,	97.53	1.77	0.70	.....	.....
B 696	Perennial rye grass,	98.77	0.69	0.54	.....	.....
B 779	Perennial rye grass,	99.54	0.36	0.10	.....	.....
	Average,	99.16	0.52	0.32	.....	.....
B 666	Japanese millet,	97.41	2.43	0.16	.....	.....
B 690	White clover,	98.35	1.32	0.33	.....	.....
B 691	White clover,	98.40	1.44	0.16	.....	.....
B 692	White clover,	99.23	0.44	0.33	.....	.....
B 783	White clover,	97.86	1.57	0.57	.....	.....
	Average,	98.46	1.19	0.35	.....	.....
B 699	Red-top grass,	95.85	0.61	3.54	.....	.....
B 697	Orchard grass,	78.83	0.49	20.68	.....	.....
B 746	Orchard grass,	66.15	26.23	7.62	.....	.....
	Average,	72.49	13.36	14.15	.....	.....
B 698	Kentucky blue grass,	87.27	0.15	12.58	.....	.....
B 738	Kentucky blue grass,	87.70	0.46	11.84	.....	.....
	Average,	87.49	0.30	12.21	.....	.....

AVERAGE PURITY OF OFFICIAL SAMPLES

For the purpose of showing the average purity of the official samples of seeds received during the year the following table has been prepared. It will be noted that each class more than exceeded the standards required indicating that the seeds, under examination, as a rule, were of such a character as to meet the requirements.

TABLE II.—AVERAGE PURITY OF OFFICIAL SAMPLES.

Name of Seed	No. samples.	Standard of purity.	Pure seed.	Foreign seed.	Inert matter.
			Per ct.	Per ct.	Per ct.
Red clover,	97	97	98.34	1.23	0.43
Crimson clover,	6	97	98.13	1.39	0.48
Alfalfa,	25	97	99.46	0.27	0.27
Timothy grass,	56	97	99.06	0.47	0.47
Barley,	6	97	99.14	0.77	0.09
Spelt,	3	97	99.48	0.51	0.01
Wheat,	5	97	99.96	0.04	0.00
Buckwheat,	3	97	98.16	1.07	0.77
Oats,	11	97	98.53	1.31	0.16
Rye,	5	97	98.35	1.10	0.55
Alsike clover,	49	95	97.47	1.87	0.66
Perennial rye grass,	4	95	95.57	2.75	1.68
German millet,	7	95	98.95	0.61	0.44
Hungarian millet,	4	95	99.05	0.72	0.23
White clover,	12	90	94.32	4.66	1.02
Red top grass,	6	85	84.84	2.56	12.60
Canadian blue grass,	2	75	86.55	2.71	10.74
Orchard grass,	7	75	74.89	4.84	20.27
Kentucky blue grass,	11	75	82.09	0.78	17.13
Sweet clover,	3	.....	97.26	2.13	0.61
Japanese millet,	1	.....	96.05	3.75	0.20
Total,	323	.....	.....	.....	.....

RESULTS OF INSPECTION

The 323 official samples of seeds examined, representing 21 kinds, were carefully tested for the percentages of "Pure Seed", "Foreign Seed" and "Inert Matter", as already indicated. The number of samples of each kind will be noted in the table showing the detailed results of the purity tests.

There were 97 samples of red clover, 10 of which were less than 97% pure, the average being 98.34 per cent. Two samples of red clover were found to contain dodder to the extent of one seed in 7,417 and one seed in 33,300, respectively. One sample showed the presence of Canada thistle to the extent of one seed in 41,725, exceeding the amount of one seed in 3,000 permitted.

There were only 6 samples of crimson clover, all of which exceeded 97% pure.

The samples of alfalfa numbered 25, the average purity being 99.46 per cent., none of which were lower than the standard of 97%, the lowest purity being 97.88 per cent. Four samples of alfalfa were found to contain dodder from the extent of one seed in 3,562 to one seed in 28,557. None of them were found to contain Canada thistle.

The timothy class was represented by 56 samples, averaging 99.06 per cent. pure, only 2 of which were less than the standard of 97%. Dodder and Canada thistle were not noted as being present in any of these samples.

The few samples of barley, spelt, wheat, buckwheat, oats and rye examined tested well over the standard of 97%, as will be noted.

There were 49 samples of alsike clover tested during the year, 3 of which fell below 95%, the standard required. The average purity being 97.47 per cent. Canada thistle was found to be present in 5 samples of alsike clover varying from one seed in 5,298 to one seed in 36,288 but no samples were found containing dodder.

Only a few samples, from 2 to 12 of each kind, of perennial rye grass, German millet, Hungarian millet, white clover, red top grass, Canadian blue grass, orchard grass and Kentucky blue grass, were received and examined. The average percentages of purity of these samples exceeded the standards required, although 2 samples of white clover, 2 samples of red top grass and 4 samples of orchard grass tested less than required.

Three samples of sweet clover and one sample of Japanese millet, not covered by the law, were received and tested and are included in the Table.

The following Table No. III shows in detail the results of the tests for purity for each official sample of seed received during the year together with the averages.

TABLE III.—RESULTS OF TESTS ON SAMPLES COLLECTED IN 1916.

Analyst's number.	Name of Seed, and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed.		Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
			Found.	Guaranteed.				
	RED CLOVER.		Per et.	Per et.	Per et.	Per et.	Approx	Approx
A 575	Medium, Francis Baker, Everett, Pa.,	H. L. Orr, Tyrone,	94.58	.....	2.65	2.77	.....	.....
A 621	——, T. H. Beekley, Mifflinburg, Pa., R. F. D. No. 1,..	T. H. Beekley, Mifflinburg, R. D. No. 1, ...	98.71	.....	0.73	0.56	.....	.....
A 622	No. 275, J. Bolgiano & Son, Baltimore, Md.,	Kleckner & Co., Mifflinburg,	96.90	.....	2.55	0.55	.....	.....
A 571	Fancy Recleaned, J. Bolgiano & Son, Baltimore, Md., ...	J. T. Murphy, Clearfield,	99.30	.....	0.58	0.12	.....	.....
A 623	Gold Fancy, J. Bolgiano & Son, Baltimore, Md.,	Kleckner & Co., Mifflinburg,	99.09	.....	0.60	0.31	.....	.....
A 642	Buff, John J. Buffington & Co., Baltimore, Md.,	B. F. Fink, Huntingdon,	98.98	.....	0.96	0.06	.....	.....
A 643	Buff Sapling, John J. Buffington & Co., Baltimore, Md.,....	B. F. Fink, Huntingdon,	98.78	.....	1.12	0.10	.....	.....
A 592	Mammoth, F. P. Cassel & Son, Lansdale, Pa.,	F. P. Cassel & Son, Lansdale,	98.89	.....	1.03	0.08	.....	.....
A 593	Medium, F. P. Cassel & Son, Lansdale, Pa.,	F. P. Cassel & Son, Lansdale,	100.00	.....	0.00	0.00	.....	.....
A 564	Lion Brand Medium, Churchill Grain & Seed Co., Toledo, Ohio.	H. L. Orr, Tyrone,	98.25	.....	1.28	0.47	.....	.....
A 608	Pure Medium, E. W. Conklin & Son, Binghamton, N. Y.,....	J. S. Waite & Co., Bellefonte,	99.96	99.98	0.02	0.02	.....	.....
A 558	Dog, Craver-Diekinson Seed Co., Inc., Buffalo, N. Y., ...	K. L. McClain & Co., Tyrone,	98.96	.....	0.60	0.44	.....	.....
A 607	Globe Brand Medium, Craver-Dickinson Seed Co., Inc., Buffalo, N. Y.	J. S. Waite & Co., Bellefonte,	99.23	.....	0.65	0.12	.....	.....
A 574	Pine Tree Brand Medium, Craver-Diekinson Seed Co., Inc., Buffalo, N. Y.	J. W. Eberts, Clearfield,	99.25	.....	0.62	0.13	.....	.....
A 560	Pine Tree Medium, Craver-Dickinson Seed Co., Inc., Buffalo, N. Y.	K. L. McClain & Co., Tyrone,	99.18	.....	0.69	0.13	.....	.....
A 563	Pine Tree Medium, Craver-Diekinson Seed Co., Inc., Buffalo, N. Y.	H. L. Orr, Tyrone,	99.27	.....	0.47	0.26	.....	.....
A 611	Pine Tree Brand, Craver-Diekinson Seed Co., Inc., Buffalo, N. Y.	J. S. Waite & Co., Bellefonte,	99.15	.....	0.77	0.18	.....	.....
A 437	——, The Crumbaugh-Kuehn Co., Toledo, Ohio,	Herr & Co., Lancaster,	99.66	.....	0.22	0.12	.....	.....
A 547	Ace Brand Medium, The Albert Dickinson Co., Chicago, Ill.	H. J. Klingler & Co., Butler,	98.89	.....	0.46	0.65	.....	.....
A 542	Globe, The Albert Dickinson Co., Chicago, Ill.,	B. F. Shannon & Co., Butler,	99.05	.....	0.47	0.48	.....	.....
A 746	Mammoth, The Albert Dickinson Co., Chicago, Ill.,	McConnell & Waterson, Kittanning,	96.69	.....	2.55	0.76	.....	.....

TABLE III.—RESULTS OF TESTS ON SAMPLES COLLECTED IN 1916—Continued.

Analyst's number.	Name of Seed, and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed. Found.	Pure Seed. Guaranteed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
	RED CLOVER—Continued.		Per ct.	Per ct.	Per ct.	Per ct.	Approx	Approx
A 686	Mammoth, The Albert Dickinson Co., Chicago, Ill., ...	Wm. Henry Maule, Inc., Philadelphia, Pa.,	96.21	.....	2.93	0.86	.....	.....
A 543	Mammoth, The Albert Dickinson Co., Chicago, Ill., ...	B. F. Shannon & Co., Butler, ...	98.27	.....	1.47	0.26	.....	.....
A 544	Medium, The Albert Dickinson Co., Chicago, Ill., ...	B. F. Shannon & Co., Butler, ...	97.26	.....	1.89	0.85	.....	.....
A 723	Pine Tree Brand Mammoth, The Albert Dickinson Co., Chicago, Ill.	Dodds & Garrett, Beaver Falls, ...	97.13	.....	2.57	0.30	.....	.....
A 706	Small, The Albert Dickinson Co., Chicago, Ill., ...	Smith, Hutton & Kirk Co., New Castle, ...	98.74	.....	0.90	0.36	.....	.....
A 548	Wisconsin Medium, The Albert Dickinson Co., Chicago, Ill.,	H. J. Klingler & Co., Butler, ...	97.00	.....	2.38	0.62	.....	.....
A 701	Mammoth, The S. W. Flower Co., Toledo, Ohio, ...	Farmers' Suply Co., New Castle, ...	99.13	.....	0.46	0.41	.....	.....
A 743	Mammoth, The S. W. Flower Co., Toledo, Ohio.	J. C. McGeary & Son, Leechburg, ...	98.49	.....	0.67	0.84	.....	.....
A 741	Medium, The S. W. Flower Co., Toledo, Ohio, ...	J. C. McGeary & Son, Leechburg, ...	99.40	.....	0.42	0.18	.....	.....
A 549	Standard A Brand, O. Gandy & Co., South Whitley, Ind.,..	Charles H. Miller & Co., Butler, ...	97.15	99.00	2.02	0.83	1-4576	.....
A 550	Standard A. Brand, O. Gandy & Co., South Whitley, Ind.,..	Charles H. Miller & Co., Butler, ...	98.82	99.00	1.10	0.08	.....	.....
A 535	Standard A Brand Medium, O. Gandy & Co., South Whitley, Ind.	Enos Barkey, Evans City, ...	98.49	.....	1.17	0.34	.....	.....
A 633	———, James Goss, Maitland, Pa., ...	H. M. Owens & Co., Lewistown, ...	91.43	.....	6.21	2.36	.....	.....
A 435	Mammoth, Henry Hirsh, Toledo, Ohio, ...	Sprecher & Ganss, Lancaster, ...	99.11	.....	0.63	0.26	.....	.....
A 427	Red Field, Henry Hirsh, Toledo, Ohio.	Sprecher & Ganss, Lancaster, ...	98.72	.....	0.60	0.68	.....	.....
A 483	Medium, Jacot & Muller, New York, N. Y., ...	Bard Hardware Co., Reading, ...	97.49	.....	1.95	0.56	.....	.....
A 714	Choice Medium, The Kelly Co., Cleveland, Ohio, ...	R. A. Hannah & Co., Sharon, ...	97.48	.....	2.19	0.33	.....	.....
A 715	Choice Medium, The Kelly Co., Cleveland, Ohio, ...	Monarch Hardware Co., Mercer, ...	98.58	.....	1.17	0.25	.....	.....
A 709	Large, The Kelly Co., Cleveland, Ohio, ...	Smith, Hutton & Kirk Co., New Castle, ...	99.05	.....	0.77	0.18	.....	.....
A 698	Medium, The Kelly Co., Cleveland, Ohio, ...	New Castle Hardware Co., New Castle, ...	97.03	.....	2.53	0.44	.....	.....
A 445	Mammoth, A. H. Hoffman, Inc., Landisville, Pa., ...	A. H. Hoffman, Inc., Landisville, ...	99.85	.....	0.10	0.05	.....	.....
A 444	Medium, A. H. Hoffman, Inc., Landisville, Pa., ...	A. H. Hoffman, Inc., Landisville, ...	99.36	.....	0.56	0.08	.....	.....
A 464	———, The Philadelphia Seed Co., Inc., Philadelphia, Pa.,	The Lancaster County Farmers' Association, Manheim.	98.71	.....	0 73	0.56	.....	.....
A 488	———, The Philadelphia Seed Co., Inc., Philadelphia, Pa.,	August W. Masser, Reading, ...	99.03	.....	0.28	0.61	.....	.....
A 603	Medium, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	W. H. Davis, Est., Norristown, ...	98.12	.....	1.23	0.63	.....	.....
A 616	Medium, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	McAlmont & Co., Bellefonte, ...	98.98	.....	0.54	0.48	.....	.....

A 670	Medium, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	Michells Seed House, Philadelphia,	99.21		0.51	0.18	
A 630	Medium, The Philadelphia Seed Co,, Inc., Philadelphia, Pa.	Spanogle-Yeager Milling Co., Lewistown,	98.33		1.33	0.34	
A 632	Puritan Brand Mammoth, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	Spanogle-Yeager Milling Co., Lewistown,	98.48		1.10	0.42	
A 614	Quaker Brand, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	John G. Dubbs, Bellefonte,	98.92		0.78	0.30	
A 556	Special Medium, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	Frazier Brothers, Tyrone,	98.62		0.98	0.40	
A 736	Oriole Brand, W. G. Scarlett & Co., Baltimore, Md.,	L. Todd Owens, Apollo,	99.77		0.23	0.00	
A 570	Best, Scobie & Parker Co., Pittsburgh, Pa.,	J. T. Murphy, Clearfield,	97.59		2.02	0.39	
A 655	————, The W. A. Simpson Co., Baltimore, Md.,	**Fox and Fox**, Altoona,	99.02		0.62	0.36	
A 615	Purity Brand, The W. A. Simpson Co., Baltimore, Md.,	John G. Dubbs, Bellefonte,	99.69	99.50	0.26	0.05	
A 646	Purity Brand, The W. A. Simpson Co., Baltimore, Md.,	J. G. Simpson, Huntingdon,	99.47		0.45	0.08	
A 660	————, W. H. Small & Co., Evansville, Ind.,	D. B. Dougherty, Altoona.	96.82		2.45	0.73	
A 496	Mammoth, W. H. Small & Co., Evansville, Ind.,	King Brothers, Uniontown,	96.34		3.42	0.24	
A 500	Medium, W. H. Small & Co., Evansville, Ind.,	King Brothers, Uniontown,	96.35		3.54	0.11	
A 678	Medium, W. H. Small & Co., Evansville, Ind.,	The Philadelphia Farmers' Supply Co., Philadelphia.	97.85		1.80	0.35	
A 624	————, The Stanford Seed Co., Buffalo, N. Y.,	E. C. Noll, Lewisburg,	99.63		0.30	0.07	
A 720	Arc, The Stanford Seed Co., Buffalo, N. Y.,	Dodds & Garrett, Beaver Falls,	99.47		0.32	0.21	
A 702	Arc, The Stanford Seed Co., Buffalo, N. Y.,	Farmers' Supply Co., New Castle,	98.99		0.57	0.44	
A 738	Fancy Mammoth, The Stanford Seed Co., Buffalo, N. Y.,	L. Todd Owens, Apollo,	98.34		1.14	0.52	
A 536	Medium, The Stanford Seed Co., Buffalo, N. Y.,	Enos Barkey, Evans City,	99.02		0.52	0.46	1–33300
A 582	Medium, The Standard Seed Co., Buffalo, N. Y.,	A. O. Gehman & Son, Coopersburg,	97.91		1.58	0.51	
A 601	Medium, The Stanford Seed Co., Buffalo, N. Y.,	Hilles & Taggart, Norristown,	99.31		0.42	0.27	
A 595	Medium, The Standard Seed Co., Buffalo, N. Y.,	Estate of George S. Snyder, Hatfield,	97.73		0.94	1.33	1–41725
A 494	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	M. H. Clark, Uniontown,	97.87		1.84	0.29	
A 599	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Doylestown Poultry Supply Co., Doylestown,	98.45		1.08	1.47	
A 627	Elk, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Buffalo Flour Mills Lewisburg,	99.67		0.16	0.17	
A 700	Eureka, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Farmers' Supply Co., New Castle,	99.23		0.59	0.18	
A 690	Mammoth, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Horton & MacNab Co., New Castle,	98.25		1.13	0.62	
A 539	Mammoth, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	S. D. Kirker, Harmony,	97.61		1.53	0.86	
A 731	Mammoth, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Rochester Seed & Supply Co., Rochester,	97.67		1.82	0.51	
A 695	Mammoth, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	P. Wagner & Son, New Castle,	98.04		1.47	0.49	
A 552	Mammoth, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	George Walter & Sons, Butler,	97.41		1.69	0.90	
A 722	Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	John G Allen, Beaver Falls,	96.83		2.63	0.54	
A 541	Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	S. D. Kirker, Harmony,	93.25		6.10	0.65	
A 577	Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	John Knen & Co., Allentown,	98.35		1.26	0.39	
A 733	Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Rochester Seed & Supply Co., Rochester,	97.44		2.12	0.44	
A 691	Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	P. Wagner & Son, New Castle,	98.32		1.28	0.40	
A 555	Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	George Walter & Sons, New Castle,	97.28		1.91	0.81	
A 640	Pan-American, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	C. H. Miller Hardware Co., Huntingdon,	97.96		1.45	0.59	1–7417
A 689	Worthy, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Horton & MacNab Co., New Castle,	98.06		1.48	0.46	
A 567	Elk, Whitney-Noyes Seed Co., Buffalo, N. Y.,	J. O. Reed, Philipsburg,	99.72		0.18	0.10	
A 713	Medium, Unknown,	Fruit-Ohl Co., Sharon,	99.31		0 51	0.18	
A 474	Medium, Unknown,	H. F. Hertzog. Reading.	98.74		0.79	0.47	
A 506	Fancy Medium, Unknown,	Allen Kirkpatrick Co., Pittsburgh,	98.73		0.66	0.61	
A 443	————, Unknown,	Reilly Brothers & Raub, Lancaster,	99.33		0.62	0.05	
A 666	Medium, Unknown,	Stokes' Seed Farms Co., Philadelphia,	98.12		1.52	0.36	
A 524	AA Medium, Unknown,	The I. W. Scott Co., Pittsburgh,	98.42		1.37	0.21	

TABLE III.—RESULTS OF TESTS ON SAMPLES COLLECTED IN 1916—Continued.

Analyst's number.	Name of Seed, and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed. Found.	Pure Seed. Guaranteed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
			Per ct.	Per ct.	Per ct.	Per ct.	Approx	Approx
	RED CLOVER—Continued.							
A 529	AAA Medium, Unknown,	The I. W. Scott Co., Pittsburgh,	99.16	.....	0.71	0.13	.....	.....
A 531	C70719 Special Medium, Unknown,	The I. W. Scott Co., Pittsburgh,	99.52	.....	0.40	0.08	.....	.....
A 516	Special Mammoth, Unknown.	The I. W. Scott Co., Pittsburgh,	98.73	.....	0.96	0.31	.....	.....
A 520	Special Medium E, Unkuown,	The I. W. Scott Co., Pittsburgh,	99.07	.....	0.63	0.30	.....	.....
		Average,	98.34	.....	1.23	0.43	.....	.....
	CRIMSON CLOVER.							
A 449	———, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	98.12	.....	1.39	0.49	.....	.....
A 672	———, Loewith & Lassen, New York, N. Y.,	Michells' Seed House, Philadelphia,	97.58	.....	1.49	0.93	.....	.....
A 684	———, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	Wm. Henry Maule, Inc., Philadelphia,	97.53	.....	2.03	0.44	.....	.....
A 650	———, The W. A. Simpson Co., Baltimore, Md.,	Fox & Fox, Altoona,	99.03	.....	0.83	0.14	.....	.....
A 580	———, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	John Knen & Co., Allentown.	98.90	.....	0.69	0.41	.....	.....
A 472	———, Unknown,	H. F. Hertzog, Reading,	97.59	.....	1.90	0.51	.....	.....
		Average,	98.13	.....	1.39	0.48	.....	.....
	ALFALFA.							
A 476	———, Blackburn & Griffith, Ogden, Utah,	H. F. Hertzog, Reading,	99.15	.....	0.06	0.79	.....	.....
A 673	———, Courteen Seed Co., Milwaukee, Wis.,	Michells' Seed House, Philadelphia,	99.68	.....	0.11	0.21	.....	.....
A 501	Globe Brand, Craver-Dickinson Seed Co., Inc., Buffalo, N. Y.	King Brothers, Uniontown,	99.52	.....	0.32	0.16	1-11356	.....
A 562	Globe, Craver-Dickinson Seed Co., Inc., Buffalo, N. Y.,	K. L. McClain & Co., Tyrone,	99.87	.....	0.10	0.03	.....	.....
A 439	———, The Crumbaugh-Kuehn Co., Toledo, Ohio,	Herr & Co., Lancaster,	99.75	.....	0.09	0.16	1-6513	.....
A 745	———, The Albert Dickinson Co., Chicago, Ill.,	McConnell & Waterson, Kittanning,	97.88	.....	2.12	0.00	.....	.....
A 484	———, George F. Fielding & Son, Manhattan, Kans.,	Bard Hardware Co., Reading,	98.32	.....	0.08	1.60	.....	.....
A 703	———, The S. W. Flower Co., Toledo, Ohio,	Farmers' Supply Co., New Castle,	99.35	.....	0.38	0.27	.....	.....
A 448	———, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	99.80	.....	0.07	0.13	.....	.....
A 728	———, The Kelly Co., Cleveland, Ohio,	M. H. Stager, New Brighton,	99.59	.....	0.04	0.37	.....	.....
A 466	———, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	The Lancaster County Farmers' Association, Manheim.	99.83	.....	0.11	0.06	1-28557	.....

A 490	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	August W. Masser, Reading,	99.87	.....	0.04	0.09	.....	.....
A 635	Quaker Brand, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	C. H. Miller Hardware Co., Huntingdon,	99.78	.....	0.20	0.02	.....	.....
A 654	————, The W. A. Simpson Co., Baltimore, Md.,	Fox & Fox, Altoona,	99.43	.....	0.29	0.28	.....	.....
A 648	Purity Brand, The W. A. Simpson Co., Baltimore, Md.,	J. G. Simpson, Huntingdon,	99.78	.....	0.18	0.04	.....	.....
A 661	————, W. H. Small & Co., Evansville, Ind.,	D. B. Dougherty & Son, Altoona,	99.58	.....	0.06	0.36	.....	.....
A 679	————, W. H. Small & Co., Evansville, Ind.,	The Philadelphia Farmers' Supply Co., Philadelphia.	99.34	.....	0.14	0.52	.....	.....
A 602	————, The Stanford Seed Co., Binghampton, N. Y.,	Hilles & Taggart, Norristown,	99.98	.....	0.00	0.02	.....	.....
A 579	————, Whitney-Eckstein Seed Co., Inc., Buffalo, N. Y.,	John Knen & Co., Allentown,	99.60	.....	0.08	0.32	.....	.....
A 428	————, Whitney-Eckstein Seed Co., Inc., Buffalo, N. Y.,	Sprecher & Ganss, Lancaster,	99.78	.....	0.04	0.18	.....	.....
A 692	————, Whitney-Eckstein Seed Co., Inc., Buffalo, N. Y.,	P. Waguer & Son, New Castle,	98.75	.....	0.89	0.36	.....	.....
A 629	Eureka, Whitney-Eckstein Seed Co., Inc., Buffalo, N. Y.,	Spanogle-Yeager Milling Co., Lewistown,	99.92	.....	0.00	0.08	.....	.....
A 505	————, Unknown,	Allen Kirkpatrick Co., Pittsburgh,	99.45	.....	0.40	0.15	.....	.....
A 511	Special, Unknown,	The I. W. Scott Co., Pittsburgh,	99.52	.....	0.23	0.25	1–3562	.....
A 668	————, Unknown,	Stokes Seed Farms Co., Philadelphia,	98.93	.....	0.64	0.43	.....	.....
		Average,	99.46	.....	0.27	0.27	.....	.....
	TIMOTHY GRASS.							
A 572	Fancy Recleaned, J. Bolgiano & Son, Baltimore, Md.,	J. T. Murphy, Clearfield,	99.47	.....	0.30	0.23	.....	.....
A 591	————, F. P. Cassel & Son, Lansdale, Pa.,	F. P. Cassel & Son, Lansdale,	99.82	.....	0.05	0.13	.....	.....
A 716	————, H. Chandler's Sons, Cleveland, Ohio,	Monarch Hardware Co., Sharon,	99.97	.....	0.01	0.02	.....	.....
A 565	Contract Prime, Churchill Grain & Seed Co., Toledo, Ohio,	H. L. Orr, Tyrone,	99.27	.....	0.44	0.29	.....	.....
A 610	King, E. W. Conklin & Son, Binghampton, N. Y.,	J. S. Waite & Co., Bellefonte,	99.76	.....	0.21	0.03	.....	.....
A 467	————, Craver-Dickinson Seed Co., Inc., Buffalo, N. Y.,	The Lancaster County Farmers' Association, Manheim.	99.76	.....	0.04	0.20	.....	.....
A 573	Pine Tree Brand, Craver-Dickinson Seed Co., Inc., Buffalo, N. Y.	J. W. Eberts, Clearfield,	99.57	.....	0.20	0.23	.....	.....
A 559	Pine Tree, Craver-Dickinson Seed Co., Inc., Buffalo, N. Y.,	K. L. McClain & Co., Tyrone,	99.69	.....	0.18	0.13	.....	.....
A 434	————, The Albert Dickinson Co., Chicago, Ill.,	Sprecher & Ganss, Lancaster,	99.65	.....	0.06	0.29	.....	.....
A 724	Pine Tree, The Albert Dickinson Co., Chicago, Ill.,	Dodds & Garrett, Beaver Falls,	99.33	.....	0.27	0.40	.....	.....
A 747	Pine Tree, The Albert Dickinson Co., Chicago, Ill.,	McConuell & Watterson, Kittanning,	99.47	.....	0.24	0.29	.....	.....
A 545	Pine Tree, The Albert Dickinson Co., Chicago, Ill.,	B. F. Shannon & Co., Butler,	99.59	.....	0.17	0.24	.....	.....
A 708	Pine Tree, The Albert Dickinson Co., Chicago, Ill.,	Smith, Hutton & Kirk Co., New Castle,	99.28	.....	0.36	0.36	.....	.....
A 742	————, The S. W. Flower Co., Toledo, Ohio,	J. C. McGeary & Son, Leechburg,	99.54	.....	0.16	0.30	.....	.....
A 508	Best, The S. W. Flower Co., Toledo, Ohio,	Scobie & Parker Co., Pittsburgh,	99.23	.....	0.55	0.22	.....	.....
A 509	C—2—, The S. W. Flower Co., Toledo, Ohio,	Scobie & Parker Co., Pittsburgh,	97.48	.....	0.98	1.54	.....	.....
A 704	Lotus, The S. W. Flower Co., Toledo, Ohio,	Farmers' Supply Co., New Castle,	99.57	.....	0.26	0.17	.....	.....
A 537	A Brand, O. Gandy & Co., South Whitley, Ind.,	Enos Barkey, Evans City,	98.22	.....	0.36	1.42	.....	.....
A 727	Choice, O. Gandy & Co., South Whitley, Ind.,	M. H. Stager, New Brighton,	98.40	.....	0.80	0.80	.....	.....
A 551	Standard A Brand, O. Gandy & Co., South Whitley, Ind.,	Charles H. Miller & Co., Butler,	99.30	99.00	0.44	0.26	.....	.....
A 726	XX, O. Gandy & Co., South Whitley, Ind.,	George W. Martsolf, New Brighton,	97.91	.....	1.34	0.75	.....	.....
A 447	————, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	99.73	.....	0.11	0.16	.....	.....
A 729	Choice, The Kelly Co., Cleveland, Ohio,	M. H. Stager, New Brighton,	99.25	.....	0.46	0.29	.....	.....
A 699	Prime, The Kelly Co., Cleveland, Ohio,	New Castle Hardware Co., New Castle,	97.92	.....	1.31	0.77	.....	.....
A 487	————, Noble Brothers, Gibson City, Ill.,	Bard Hardware Co., Reading,	98.19	.....	1.00	0.81	.....	.....
A 717	————, Palmer Miller Seed Co., Salina, Ohio,	Frank Maley, Sharon,	98.58	.....	0.91	0.51	.....	.....
A 491	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	Angnst W. Masser, Reading,	94.61	.....	2.28	3.11	.....	.....
A 637	Puritan, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	C. H. Miller Hardware Co., Huntingdon,	99.30	.....	0.17	0.53	.....	.....

TABLE III.—RESULTS OF TESTS ON SAMPLES COLLECTED IN 1916—Continued.

Analyst's number.	Name of Seed, and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed.		Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
			Found.	Guaranteed.				
	TIMOTHY GRASS—Continued.		Per ct.	Per ct.	Per ct.	Per ct.	Approx	Approx
A 737	Oriole Brand, W. G. Scarlett & Co., Baltimore, Md., ...	L. Todd Owens, Apollo, ...	99.42	.....	0.29	0.29	.....	.....
A 631	Oriole Brand, W. G. Scarlett & Co., Baltimore, Md., ...	Spanogle-Yeager Milling Co., Lewistown, ..	99.10	.....	0.36	0.54	.....	.....
A 749	Bison Brand, Scobie & Parker Co., Pittsburgh, Pa., ...	Masters & Springer, New Kensington, ...	98.19	.....	1.27	0.54	.....	.....
A 569	No. 1, Scobie & Parker Co., Pittsburgh, Pa., ...	J. T. Murphy, Clearfield, ...	97.85	.....	0.95	1.20	.....	.....
A 653	———, The W. A. Simpson Co., Baltimore, Md., ...	Fox & Fox, Altoona, ...	98.96	.....	0.61	0.43	.....	.....
A 613	Purity Brand, The W. A. Simpson Co., Baltimore, Md.,....	John G. Dubbs, Bellefonte.	99.44	.....	0.32	0.24	.....	.....
A 647	Purity Brand, The W. A. Simpson Co., Baltimore, Md.,....	J. G. Simpson, Huntingdon, ...	99.62	.....	0.19	0.19	.....	.....
A 658	———, W. H. Small & Co., Evansville, Ind., ...	D. B. Dougherty & Son, Altoona, ...	99.45	.....	0.12	0.43	.....	.....
A 475	———, W. H. Small & Co., Evansville, Ind., ...	H. F. Hertzog, Reading, ...	99.63	.....	0.27	0.10	.....	.....
A 553	———, W. H. Small & Co., Evansville, Ind., ...	George Walter & Sons, Butler, ...	99.39	.....	0.27	0.34	.....	.....
A 498	Dart, W. H. Small & Co.. Evansville, Ind., ...	King Brothers, Uniontown, ...	99.25	.....	0.50	0.25	.....	.....
A 712	———, The Toledo Field Seed Co., Toledo, Ohio, ...	Fruit-Ohl Co., Sharon, ...	98.94	.....	0.21	0.85	.....	.....
A 694	———, Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	P. Wagner & Son, New Castle, ...	98.84	.....	0.49	0.67	.....	.....
A 718	Herald, Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	Dodds & Garrett, Beaver Falls, ...	98.91	.....	0.19	0.90	.....	.....
A 688	Imperator, Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	Horton & MacNab, New Castle, ...	98.33	.....	1.34	0.33	.....	.....
A 721	Pan-American, Whitney-Eckstein Seed Co., Buffalo, N. Y.,..	John G. Allen, Beaver Falls, ...	99.66	.....	0.23	0.11	.....	.....
A 495	Pan-American, Whitney-Eckstein Seed Co., Buffalo, N. Y.,..	M. H. Clark, Uniontown, ...	99.51	.....	0.32	0.17	.....	.....
A 719	Pan-American, Whitney-Eckstein Seed Co., Buffalo, N. Y.,..	Dodds & Garrett, Beaver Falls, ...	99.41	.....	0.09	0.50	.....	.....
A 540	Pan-American, Whitney-Eckstein Seed Co., Buffalo, N. Y.,..	S. D. Kirker, Harmony, ...	99.30	.....	0.58	0.12	.....	.....
A 735	Pan-American. Whitney-Eckstein Seed Co., Buffalo, N. Y.,..	Rochester Seed & Supply Co.,, Rochester,..	99.44	.....	0.34	0.22	.....	.....
A 566	Jap. Whitney-Noyes Seed Co.. Buffalo, N. Y., ...	J. O. Reed, Philipsburg, ...	99.64	.....	0.23	0.13	.....	.....
A 507	Fancy, Unknown, ...	Allen Kirkpatrick Co., Pittsburgh, ...	99.54	.....	0.26	0.20	.....	.....
A 504	Prime, Unknown, ...	Allen Kirkpatrick Co., Pittsburgh, ...	96.33	.....	1.85	1.82	.....	.....
A 534	Premium Brand, Unknown, ...	The Leedom & Worrall Co., Butler, ...	99.63	.....	0.12	0.25	.....	.....
A 618	———, Unknown, ...	McCalmont & Co., Bellefonte, ...	99.77	.....	0.09	0.14	.....	.....
A 525	Special, Unknown, ...	The I. W. Scott Co., Pittsburgh, ...	99.92	.....	0.06	0.02	.....	.....
A 521	XX, Unknown, ...	The I. W. Scott Co., Pittsburgh, ...	98.42	.....	1.11	0.47	.....	.....
A 530	XXX, Unknown, ...	The I. W. Scott Co., Pittsburgh, ...	99.59	.....	0.14	0.27	.....	.....
		Average, ...	99.06	.....	0.47	0.47	.....	.....

	BARLEY.						
A 586	————, F. P. Cassel & Son, Lansdale, Pa.,	F. P. Cassel & Son, Lansdale,	99.93		0.06	0.01	
A 492	————, The Albert Dickinson Co., Chicago, Ill.,	A. M. Weltmer's Sons, Lebanon,	98.10		1.63	0.27	
A 683	Hulless, The Albert Dickinson Co., Chicago, Ill.,	Wm. Henry Maule, Inc., Philadelphia,	99.97		0.00	0.03	
A 456	————, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	99.75		0.19	0.06	
A 519	Beardless, Unknown,	The I. W. Scott Co., Pittsburgh,	97.21		2.65	0.14	
A 533	Six Row, Unknown,	The I. W. Scott Co., Pittsburgh,	99.86		0.08	0.06	
		Average,	99.14		0.77	0.09	
	SPELT.						
A 682	————, The Albert Dickinson Co., Chicago, Ill.,	Wm. Henry Maule, Inc., Philadelphia,	99.98		0.01	0.01	
A 457	————, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	99.62		0.36	0.02	
A 515	————, Unknown,	The I. W. Scott Co., Pittsburgh,	98.84		1.16	0.00	
		Average,	99.48		0.51	0.01	
	WHEAT.						
A 677	Spring, The Albert Dickinson Co., Chicago, Ill.,	Michell's Seed House, Philadelphia,	99.86		0.13	0.01	
A 461	Spring, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	99.93		0.07	0.00	
A 685	Marques Spring, Frank S. Platt Co., New Haven, Conn.,	Wm. Henry Maule, Inc., Philadelphia,	100.00		0.00	0.00	
A 527	Blue Stem Spring, Unknown,	The I. W. Scott Co., Pittsburgh,	100.00		0.00	0.00	
A 512	Fife Spring, Unknown,	The I. W. Scott Co., Pittsburgh,	100.00		0.00	0.00	
		Average,	99.96		0.04	0.00	
	BUCKWHEAT.						
A 460	Japanese, A. H. Hoffman Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	98.65		0.82	0.53	
A 482	Japanese, Wertz Milling Co., Reading, Pa.,	H. F. Hertzog, Reading,	96.48		2.26	1.26	
A 493	Japanese, Unknown,	A. M. Weltmer's Sons, Lebanon,	99.34		0.13	0.53	
		Average,	98.16		1.07	0.77	
	OATS						
A 597	————, M. F. Baringer, Philadelphia, Pa.,	H. S. Beidler, Doylestown,	97.83		2.09	0.08	
A 584	Montana White, F. P. Cassel & Son, Lansdale, Pa.,	F. P. Cassel & Son, Lansdale,	98.26		1.72	0.02	
A 458	Climax Brand, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	99.86		0.01	0.13	
A 478	White Bonanza, Illinois Seed Co., Chicago, Ill.,	H. F. Hertzog, Reading,	99.35		0.62	0.03	
A 676	Storm King, N. B. Keeney & Son, Leroy, N. Y.,	Michell's Seed House, Philadelphia,	99.84		0.13	0.03	
A 687	Bumper Crop, George Ketchum, Victor, N. Y.,	Wm. Henry Maule, Inc., Philadelphia,	99.75		0.11	0.14	
A 651	Montana Seed, The W. A. Simpson Co., Baltimore, Md.,	Fox & Fox, Altoona,	97.88		1.81	0.31	
A 681	Silver Cluster, W. H. Small & Co., Evansville, Ind.,	The Philadelphia Farmers' Supply Co., Philadelphia.	98.13		1.71	0.16	
A 581	Canadian Cluster, Whitney-Eckstein Seed Co., Inc., Buffalo, N. Y.	John Knen & Co., Allentown,	96.99		2.93	0.08	
A 594	Paddock Hodge, S. H. Young, Philadelphia, Pa.,	Estate of George S. Snyder, Hatfield,	99.75		0.04	0.21	
A 605	————, Unknown,	Simpson Brothers, Norristown,	96.14		3.31	0.55	
		Average,	98.53		1.31	0.16	

TABLE III.—RESULTS OF TESTS ON SAMPLES COLLECTED IN 1916—Continued.

Analyst's number.	Name of Seed, and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed. Found.	Pure Seed. Guaranteed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
			Per ct.	Per ct.	Per ct.	Per ct.	Approx	Approx
	RYE.							
A 675	Spring, The Albert Dickinson Co., Chicago, Ill., ...	Michell's Seed House, Philadelphia, ...	99.18	.....	0.79	0.03	.....	.....
A 459	Spring, A. H. Hoffman, Inc., Landisville, Pa., ...	A. H. Hoffman, Inc., Landisville, ...	99.13	.....	0.87	0.00	.....	.....
A 481	Spring, Noble Brothers, Gibson City, Ill., ...	H. F. Hertzog, Reading, ...	97.91	.....	0.72	1.37	.....	.....
A 513	Spring, Unknown, ...	The I. W. Scott Co., Pittsburgh, ...	99.48	.....	0.52	0.00	.....	.....
A 669	Spring, Unknown, ...	Stokes' Seed Farms Co., Philadelphia, ...	96.04	.....	2.59	1.37	.....	.....
		Average, ...	98.35	.....	1.10	0.55	.....	.....
	ALSIKE CLOVER.							
A 619	————, John J. Buffington & Co., Baltimore, Md., ...	R. Foster & Son, Mifflinburg, ...	95.87	.....	3.15	0.98	.....	.....
A 585	————, F. P. Cassel & Son, Lansdale, Pa., ...	F. P. Cassel & Son, Lansdale, ...	99.35	.....	0.19	0.46	.....	.....
A 561	————, Craver-Dickinson Seed Co., Buffalo. N. Y., ...	K. L. McLain & Co., Tyrone, ...	98.17	.....	0.50	1.33	.....	.....
A 609	Pine Tree, Craver-Dickinson Seed Co., Buffalo, N. Y., ...	J. S. Waite & Co., Bellefonte, ...	96.46	.....	2.92	0.62	.....	.....
A 438	————, The Crumbaugh-Kuehn Co., Toledo, Ohio, ...	Herr & Co., Lancaster, ...	99.57	.....	0.14	0.29	.....	.....
A 744	————, The Albert Dickinson Co., Chicago, Ill., ...	McConnell & Watterson Co., Kittanning, ...	95.11	.....	4.41	0.48	.....	1-21816
A 546	————, The Albert Dickinson Co., Chicago, Ill., ...	B. F. Shannon & Co., Butler, ...	97.77	.....	1.67	0.56	.....	.....
A 710	————, The Albert Dickinson Co., Chicago, Ill., ...	Smith, Hutton & Kirk Co., New Castle, ...	98.16	.....	1.72	0.12	.....	.....
A 429	————, The Albert Dickinson Co., Chicago, Ill., ...	Sprecher & Ganss, Lancaster, ...	98.93	.....	0.53	0.54	.....	.....
A 740	————, The S. W. Flower Co., Toledo, Ohio, ...	J. C. McGeary & Son, Leechburg, ...	98.65	.....	0.65	0.70	.....	.....
A 446	————, A. H. Hoffman, Inc., Landisville, Pa.	A. H. Hoffman, Inc., Landisville, ...	99.38	.....	0.41	0.21	.....	.....
A 697	————, The Kelly Co., Cleveland, Ohio, ...	New Castle Hardware Co., New Castle, ...	96.54	.....	2.30	1.16	.....	.....
A 730	Choice, The Kelly Co., Cleveland, Ohio, ...	M. H. Stager, New Brighton, ...	97.29	.....	2.10	0.61	.....	.....
A 693	————, Palmer-Miller Grain Co., Salina, Ohio, ...	P. Wagner & Son, New Castle, ...	94.67	.....	4.97	0.36	.....	.....
A 598	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	H. S. Beidler, Doylestown, ...	94.38	.....	4.59	1.03	.....	1-15799
A 604	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	W. H. Davis Estate, Norristown, ...	95.49	.....	3.06	1.45	.....	.....
A 557	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	Frazier Brothers, Tyrone, ...	95.60	.....	4.33	0.07	.....	.....
A 477	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	H. F. Hertzog, Reading, ...	95.06	.....	4.48	0.46	.....	.....

A 465	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	The Lancaster County Farmers' Association, Manheim.	97.00	.....	2.77	0.23	.....	.....
A 617	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	McCalmont & Co., Bellefonte,	99.39	.....	0.38	0.23	.....	.....
A 489	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	August W. Masser, Reading,	98.65	.....	0.69	0.66	.....	.....
A 639	————, The Philadelphia Seed Co., Inc., Philadelphia, Pa.	C. H. Miller Hardware Co., Huntingdon,	97.15	.....	2.62	0.23	.....	.....
A 628	Quaker Brand, The Philadelphia Seed Co., Philadelphia, Pa.	Spanogle-Yeager Milling Co., Lewistown,	97.77	.....	2.06	0.17	.....	.....
A 652	————, The W. A. Simpson Co., Baltimore, Md.,	Fox & Fox, Altoona,	98.87	.....	0.72	0.41	.....	.....
A 645	No. 1 Purity Brand, The W. A. Simpson Co., Baltimore, Md.	J. G. Simpson, Huntingdon,	98.08	.....	0.26	1.66	.....	.....
A 612	Purity Brand, The W. A. Simpson Co., Baltimore, Md.,	John G. Dubbs, Bellefonte,	97.69	99.06	0.21	2.10	.....	.....
A 662	————, W. H. Small & Co., Evansville, Ind.,	D. B. Dougherty & Son, Altoona,	96.71	.....	2.62	0.67	.....	.....
A 497	————, W. H. Small & Co., Evansville, Ind.,	King Brothers, Uniontown,	97.67	.....	2.15	0.18	.....	.....
A 680	————, W. H. Small & Co., Evansville, Ind.,	The Philadelphia Farmers' Supply Co., Philadelphia.	97.53	.....	2.17	0.30	.....	.....
A 725	————, The Stanford Seed Co., Buffalo, N. Y.,	Dodds & Garrett, Beaver Falls,	99.40	.....	0.32	0.28	.....	.....
A 583	————, The Stanford Seed Co., Buffalo, N. Y.,	A. G. Gehman, Coopersburg,	98.51	.....	1.28	0.21	.....	.....
A 600	————, The Stanford Seed Co., Buffalo, N. Y.,	Hilles & Taggart, Norristown,	98.80	.....	0.92	0.28	.....	.....
A 596	————, The Stanford Seed Co., Buffalo, N. Y.,	Estate of George S. Snyder, Hatfield,	99.55	.....	0.35	0.10	.....	.....
A 625	Arc Brand, The Stanford Seed Co., Buffalo, N. Y.,	E. C. Noll, Lewisburg,	98.55	.....	0.83	0.62	.....	.....
A 739	Honor Braud, The Stanford Seed Co., Buffalo, N. Y.,	L. Todd Owens, Apollo,	99.30	.....	0.35	0.35	.....	.....
A 485	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Bard Hardware Co., Reading,	98.88	.....	0.81	0.31	.....	.....
A 578	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	John Knen & Co., Allentown,	98.74	.....	0.72	0.54	.....	.....
A 671	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Michell's Seed House, Philadelphia,	97.08	.....	1.49	1.43	.....	.....
A 606	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Simpson Brothers, Norristown,	97.29	.....	1.83	0.88	.....	.....
A 554	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	George Walter & Sons, Butler,	95.90	.....	3.04	1.06	.....	.....
A 705	Pan-American, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Farmers' Supply Co., New Castle,	97.35	.....	1.27	1.38	.....	.....
A 538	Pan-American, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	S. D. Kirker, Harmony,	96.04	.....	3.23	0.73	.....	1-5298
A 734	Pan-American, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Rochester Seed & Supply Co., Rochester,	97.59	.....	1.29	1.12	.....	.....
A 568	Tola, Whitney-Noyes Seed Co., Buffalo, N. Y.,	J. O. Reed, Philipsburg,	95.88	.....	1.61	2.51	.....	.....
A 503	————, Unknown,	Allen Kirkpatrick Co., Pittsburgh,	96.15	.....	2.87	0.98	.....	.....
A 442	————, Unknown,	Reilly Brothers & Raub, Lancaster,	96.97	.....	2.56	0.47	.....	1-17226
A 514	AAA, Unknown,	The I. W. Scott Co., Pittsburgh,	98.40	.....	1.47	0.13	.....	1-36288
A 510	Special, Unknown,	The I. W. Scott Co., Pittsburgh,	99.43	.....	0.31	0.26	.....	.....
A 667	————, Unknown,	Stokes' Seed Farms Co., Philadelphia,	93.25	.....	6.35	0.40	.....	.....
		Average,	97.47	.....	1.87	0.66	.....	.....
	PERENNIAL RYE GRASS.							
A 462	————, A. H. Hoffman, Inc. Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	95.03	.....	1.55	3.42	.....	.....
A 664	————, W. H. Small & Co., Evansville, Ind.,	D. B. Daugherty & Son, Altoona,	97.13	.....	2.32	0.55	.....	.....
A 517	Short, Unknown,	The I. W. Scott Co., Pittsburgh,	94.78	.....	3.91	1.31	.....	.....
A 711	————, Unknown,	Smith, Hutton & Kirk Co., New Castle,	95.32	.....	3.21	1.47	.....	.....
		Average,	95.57	.....	2.75	1.68	.....	.....
	GERMAN MILLET.							
A 620	————, John J. Buffington & Co., Baltimore, Md.,	R. Foster & Son, Mifflinburg,	99.05	.....	0.81	0.14	.....	.....
A 674	————, John J. Buffington & Co., Baltimore, Md.,	Michell's Seed House, Philadelphia,	99.55	.....	0.17	0.28	.....	.....
A 588	Tennessee, F. P. Cassel & Son, Lansdale, Pa.,	F. P. Cassel & Son, Lansdale,	99.87	.....	0.09	0.04	.....	.....

TABLE III. RESULTS OF TESTS ON SAMPLES COLLECTED IN 1916—Concluded.

Analyst's number	Name of Seed, and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed. Found.	Pure Seed. Guaranteed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
	GERMAN MILLET—Continued.		Per ct.	Per ct.	Per ct.	Per ct.	Approx	Approx
A 463	————, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman & Co., Landisville,	97.62	.....	0.70	1.68	.....	.....
A 471	————, Noble Brothers, Gibson City, Ill.,	H. F. Hertzog, Reading,	99.73	.....	0.16	0.11	.....	.....
A 430	————, Wm. G. Scarlett & Co., Baltimore, Md.,	Sprecher & Ganss, Lancaster,	98.43	.....	1.16	0.41	.....	.....
A 659	————, W. H. Small & Co., Evansville, Ind.,	D. B. Dougherty, Altoona,	98.37	.....	1.19	0.44	.....	.....
		Average,	98.95	.....	0.61	0.44	.....	.....
	HUNGARIAN MILLET.							
A 587	————, F. P. Cassel & Son, Lansdale, Pa.,	F. P. Cassel & Son, Lansdale,	99.59	.....	0.36	0.05	.....	.....
A 440	————, The Albert Dickinson Co., Chicago, Ill.,	Steinman Hardware Co., Lancaster,	98.83	.....	0.75	0.42	.....	.....
A 455	————, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Landisville,	99.13	.....	0.60	0.27	.....	.....
A 470	————, Toledo Field Seed Co., Toledo, Ohio,	H. F. Hertzog, Reading,	98.66	.....	1.16	0.18	.....	.....
		Average,	99.05	.....	0.72	0.23	.....	.....
	WHITE CLOVER.							
A 590	————, F. P. Cassel & Son, Lansdale, Pa.,	F. P. Cassel & Son, Lansdale,	98.19	.....	1.51	0.30	.....	.....
A 748	————, The Albert Dickinson Co., Chicago, Ill.,	McConnell & Watterson, Kittanning,	93.98	.....	5.35	0.67	.....	.....
A 453	————, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	97.79	.....	1.84	0.37	.....	.....
A 634	Dutch, D. Landreth Seed Co., Bristol, Pa.,	C. H. Miller Hardware Co., Huntingdon,	93.62	.....	5.98	0.40	.....	.....
A 657	————, W. H. Small & Co., Evansville, Ind.,	D. B. Dougherty & Son, Altoona,	98.93	.....	0.45	0.62	.....	.....
A 436	Punch Brand, W. H. Small & Co., Evansville, Ind.,	Sprecher & Ganss, Lancaster,	96.70	.....	3.03	0.27	.....	.....
A 486	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	Bard Hardware Co., Reading,	82.56	.....	11.45	5.99	.....	.....
A 576	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	John Knen & Co., Allentown,	96.67	.....	3.09	0.24	.....	.....
A 638	————, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	C. H. Miller Hardware Co., Huntingdon,	86.61	.....	12.17	1.22	.....	.....
A 473	————, Unknown,	H. F. Hertzog, Reading,	90.20	.....	8.29	1.51	.....	.....
A 518	AAA, Unknown,	The I. W. Scott Co., Pittsburgh,	97.73	.....	1.90	0.37	.....	.....
A 528	Special, Unknown,	The I. W. Scott Co., Pittsburgh,	98.89	.....	0.90	0.21	.....	.....
		Average	94.32	.....	4.66	1.02	.....	.....

	RED TOP GRASS.							
A 469	————, J. Bolgiano & Son, Baltimore, Md.,	H. F. Hertzog, Reading,	96.05	.....	1.27	2.68	.....	.....
A 431	Fancy, The Albert Dickinson Co., Chicago, Ill.,	Spreeher & Ganss, Lancaster,	91.33	.....	0.92	7.75	.....	.....
A 450	————, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	89.10	.....	2.12	8.78	.....	.....
A 665	————, W. G. Searlett & Co., Baltimore, Md.,	D. B. Dougherty & Son, Altoona,	52.77	.....	5.12	42.11	.....	.....
A 732	————, Whitney-Eekstein Seed Co,, Buffalo, N. Y.,	Roehester Seed & Supply Co., Rochester,	84.39	.....	5.11	10.50	.....	.....
A 526	AAA Faney, Unknown,	The I. W. Seott Co., Pittsburgh,	95.40	.....	0.84	3.76	.....	.....
		Average,	84.84	.....	2.56	12.60	.....	.....
	CANADIAN BLUE GRASS.							
A 454	————, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	88.10	.....	2.26	9.64	.....	.....
A 641	————, Whitney-Eekstein Seed Co., Buffalo, N. Y.,	C. H. Miller Hardware Co., Huntingdon,	85.00	.....	3.15	11.85	.....	1-40695
		Average,	86.55	.....	2.71	10.74	.....	.....
	ORCHARD GRASS.							
A 452	————, A. H. Hoffman, Inc., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	74.29	.....	1.85	23.86	.....	.....
A 707	————, The Kelly Co., Cleveland, Ohio,	Smith, Hutton & Kirk Co., New Castle,	81.36	.....	0.27	18.37	.....	.....
A 479	————, Wm. G. Searlett & Co., Baltimore, Md.,	H. F. Hertzog, Reading,	66.45	.....	25.00	8.55	.....	.....
A 644	————, The W. A. Simpson Co., Baltimore, Md.,	J. G. Simpson, Huntingdon,	74.67	.....	1.41	23.92	.....	.....
A 656	————, W. H. Small & Co., Evansville, Ind.,	D. B. Dougherty & Son, Altoona,	84.97	.....	1.89	13.14	.....	.....
A 499	Eclipse, W. H. Small & Co., Evansville, Ind.,	King Brothers, Uniontown,	62.78	.....	2.51	34.71	.....	.....
A 523	Special, Unknown,	The I. W. Scott Co., Pittsburgh,	79.70	.....	0.94	19.36	.....	.....
		Average,	74.89	.....	4.84	20.27	.....	.....
	KENTUCKY BLUE GRASS.							
A 589	————, F. P, Cassel & Son, Lansdale, Pa.,	F. P. Cassel & Son, Lansdale,	96.31	.....	0.59	3.10	.....	.....
A 441	————, The Albert Dickinson Seed Co., Buffalo, N. Y.,	Steinman Hardware Co., Lancaster,	70.46	.....	0.68	28.86	.....	.....
A 451	————, A. H. Hoffman, Ine., Landisville, Pa.,	A. H. Hoffman, Inc., Landisville,	80.42	.....	0.87	18.71	.....	.....
A 480	————, Wm. G. Searlett & Co., Baltimore, Md.,	H. F. Hertzog, Reading,	85.42	.....	0.81	13.77	.....	.....
A 649	————, The W. A. Simpson Co., Baltimore, Md.,	J. G. Simpson, Huntingdon,	82.47	.....	0.37	17.16	.....	.....
A 663	————, W. H. Small & Co., Evansville, Ind.,	D. B. Dougherty & Son, Altoona,	82.84	.....	2.24	14.92	.....	.....
A 502	Climax Faney, W. H. Small & Co., Evansville, Ind.,	King Brothers, Uniontown,	85.43	.....	1.09	13.48	.....	.....
A 626	Faney, The Stanford Seed Co., Buffalo, N. Y.,	E. C. Noll, Lewisburg,	81.20	.....	0.73	18.07	.....	.....
A 636	————, Whitney-Eekstein Seed Co.. Buffalo, N. Y.,	C. H. Miller Hardware Co.. Huntingdon,	75.40	.....	0.49	24.11	.....	.....
A 696	————, Whitney-Eekstein Seed Co., Buffalo, N. Y.,	P. Wagner & Son, New Castle,	76.09	.....	0.34	23.57	.....	.....
A 522	————, Unknown,	The I. W. Scott Co., Pittsburgh,	86.96	.....	0.34	12.70	.....	.....
		Average,	82.09	.....	0.78	17.13	.....	.....
	SWEET CLOVER.							
A 468	————, Blackburn & Griffith, Ogden, Utah,	H. F. Hertzog, Reading,	94.59	.....	4.91	0.50	.....	.....
A 433	White Blossom, S. G. Courteen, Milwaukee, Wis.,	Spreeher & Ganss, Lancaster,	99.72	.....	0.13	0.15	.....	.....
A 432	Yellow Blossom, S. G. Courteen, Milwaukee, Wis.,	Sprecher & Ganss, Lancaster,	97.46	.....	1.36	1.18	.....	.....
		Average,	97.26	.....	2.13	0.61	.....	.....
	JAPANESE MILLET.							
A 532	————, Unknown,	The I. W. Seott Co., Pittsburgh,	96.05	.....	3.75	0.20	.....	.....